

USSN: 09/494,837
Attorney Docket No: 0153.00084

REMARKS

Claims 22-26 are currently pending in the application. Only claim 22 is in independent form.

Claims 22-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C § 103(a) as being obvious over EP0439898. Reconsideration of the rejection is respectfully requested.

The Office Action states that the EP '898 patent discloses a method that produces a hose that has achieved a superior bond between the braided material and the inner liner. Specifically, the Office Action states that the cited reference teaches a hose assembly with a braided glass fiber thereon, such that the glass fiber layer has on its surface a polymeric dispersion and thus the recited EP '898 patent discloses a hose assembly that is identical to that of the presently pending independent claims. The Office Action states that while the presently pending independent claims contain two separate dispersion coatings, there is no reason to believe the product produced by this process would have been any different from the product disclosed in EP '898. However, there is no disclosure in EP '898 for a hose assembly containing an inner liner, a dispersion on the inner liner, a braided layer, and a further dispersion on the exterior of the hose assembly. Instead, the hose assembly of EP '898 recites a hose assembly including an inner liner, a pre-coated braided layer. The exterior surface of the braid therefore contains gaps between the fibers.

It is respectfully submitted that the presently pending independent claims claim a hose assembly that is different than that disclosed in the EP '898 patent. More specifically, presently pending independent claim 22 claims a hose assembly that includes an inner tubular liner, a dispersion applied to the liner, a braided layer positioned about the inner liner and a second dispersion that is applied to the braid

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layer. Thus, in total, there is a single inner liner, a braided layer, and two dispersion layers, one of which is located between the inner layer and the braided layer, and one is applied to the exterior of the braided layer after it has been applied to the hose. The second dispersion fills in the gaps between the fibers of the braid thereby creating a more uniform surface and therefore greater stability and abrasion resistance. Presently pending independent claim 22 does not recite a hose assembly including a pre-coated glass braided fiber as is disclosed in EP '898, while the Office Action equates the pre-coated braided layer to the dispersion layer and braided layer of the presently pending independent claims, the pre-coated braided layer is not equivalent to the dispersion and braid combination of the presently pending independent claims.

Moreover, the hose assembly of the presently pending claims provides unexpected results, namely, that the bond created by the first dispersion is more uniform and has less variation in the strength of the bond than those found in other hose assemblies. These characteristics are accomplished because of the first dispersion layer on the inner liner. This dispersion layer ensures proper binding of the braid to the inner layer. The unexpected results of the first dispersion establish the novelty and non-obviousness of the hose assembly of the present application. Since the EP '898 patent does not disclose or suggest a hose assembly including two dispersions creating two separate layers within the hose assembly, then the EP '898 patent does not render the presently pending independent claims unpatentable, and reconsideration of the rejection is respectfully requested.

Claims 22-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0380841 in view of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach patents optionally further taken with the Green patent. Reconsideration of the rejection under 35 U.S.C. §103(a) over EP 0380841

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in view of any on of Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach optionally further taken with Green, as applied to the claims, is also respectfully requested.

The Office Action states that at the time the invention was made, EP 0380841 taught that it was known to form a fluorocarbon tubular core member and braid upon the same. The Office Action states that it was notoriously well known in the braiding art to apply a coating to a tube prior to braiding followed by an application of the second coating in order to ensure complete encapsulation of the braided material within the coating material as evidenced by Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach. However, when read more specifically, the Brumbach patent discloses using multiple layers of adhesive because more than one braided layer was utilized, and in order for the braided layers to be affixed to one another, adhesives were required. The Arterburn patent discloses multiple layers of braiding for reinforcement of the tube. It is obvious to utilize multiple layers of adhesive because multiple braiding layers are used. Absent the use of multiple layers of braiding there would be no need for multiple layers of adhesive because a single braided layer only needs to be affixed to a single inner liner.

The Mathews patent discloses encapsulated fibers of the braided material. The encapsulated material includes an adhesive material that is capable of affixing the braided layer to the inner layer. However, there is no disclosure of the two dispersion layers as disclosed in the hose assembly of the presently pending independent claims. The Haren and Gray et al. patents disclose the use of multiple layers of adhesive because more than one braided layer was utilized, and in order for the braided layers to be affixed to one another, adhesives were required. Multiple layers of braiding were required for reinforcement of the tube. It is obvious to utilize

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multiple layers of adhesive because multiple braiding layers are used. Absent the use of multiple layers, there would be no need for multiple layers of adhesive because a single braided layer only needs to be affixed to a single inner liner. Therefore, it has been shown that it is clearly known to those of skill in the art that when multiple layers of braiding are utilized, multiple layers of adhesive must be used to adhere braided layers to the previous layers. There is no disclosure in any of the prior art patents for using more than one layer of adhesive for affixing a single braided layer.

The cited Green patent specifically states that a single dip is utilized wherein the inner liner is dipped through material and then the glass fibers of a braid are added about the dispersion. The assembly is then heated to remove fluid and there is created a sufficiently cured fluorocarbon polymer material containing thereabout a braided layer. This is precisely what has been repeatedly taught in the prior art: that a single layer of dispersion can be used to apply a braided layer to an inner liner. There is no teaching in the prior art that multiple layers of the dispersion need to be applied when a single braided layer is used in a hose assembly.

The presently pending claims recite two dispersion layers within the hose assembly. The layers provide better bond strength and better flexibility of the hose. This is unexpected because it was common knowledge to those of skill in the art that a single dipped hose assembly would provide sufficient adherence of the braided layer to the inner liner. It is not known to those of skill in the art to produce a hose assembly having two dispersion layers. Instead, it was well known to those of skill in the art to use a single adhesive layer to apply a single braided layer to an inner liner.

Multiple layers of adhesive were only utilized when more than one layer of braiding was applied to the hose. As stated in all of the prior art patents, multiple adhesives were utilized when multiple braiding layers were applied. For example, if

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two layers of braiding were utilized, two layers of adhesive were utilized to affix the braids to the under-layers. There is no disclosure in any of the prior art patents to use an additional layer on top of the adhesive layers for affixing all of the braids to the inner hose. Since none of the prior art patents, alone or in combination, teaches or suggests the hose assembly of the present invention, the present invention is patentable over the prior art, and reconsideration of the rejection is respectfully requested.

It is respectfully requested that the present amendment be entered in order to place the application in condition for allowance or at least in better condition for appeal. The application is placed in condition for allowance as it addresses and resolves each and every issue that remains pending. Claims have also been amended to clearly distinguish over the prior art. The application is made at least in better condition for appeal as the amendment removes many issues thereby simplifying the issues on appeal. The claims have been amended to more specifically define the invention while raising no new issues that would require any further searching. Rather, the amendments have been made in view of comments made in the Office Action that clearly distinguish the presently pending claims over the cited prior art. Hence, it is respectfully requested that the amendment be entered.

This amendment could not have been made earlier as the amendment further defines the claims over the prior art in accordance with the suggestion made in the Office Action, the suggestion first being made in the outstanding Office Action. Hence, since there remain no further issues to be resolved, it is respectfully requested that the present amendment be entered.

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In conclusion, it is respectfully requested that the present amendment be entered in order to place the application in condition for allowance, which allowance is respectfully requested.

The Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 11-1449.

Respectfully submitted,

KOHN & ASSOCIATES, PLLC

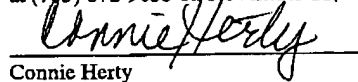


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CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is being transmitted by facsimile to Examiner J. Aftergut at the Patent and Trademark Office at (703) 872-9053 on November 21, 2002.


Connie Herty

KOHN &
ASSOCIATES
P • L • L • C
Intellectual Property Law

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CONFIRMATION ☐ via mail
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☒ will not follow

November 21, 2002

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PAGE(S): 10 (including this sheet)

RE: USSN: 09/494,837
Applicant: Boney Mathew, et al.
Our File No.: 0153.00084

MESSAGE: Pursuant to our recent telephone conversation regarding the above-referenced patent application, attached hereto please find an Amendment under Rule 1.116. Please call me if you have any questions regarding the same.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

CLAIMS:

22. (Amended) A hose assembly comprising:

an inner tubular liner (12) made of a fluorocarbon polymer;

a fluorocarbon polymer dispersion comprising a [fluorocarbon polymer] material applied to said inner liner (12);

a braided layer (13) including gaps positioned about the inner liner (12) whereby said dispersion prevents relative movement of the braided layer (13) to the inner liner (12); and

a second fluorocarbon polymer dispersion comprising a [fluorocarbon polymer] material applied to said braided layer (13) thereby eliminating gaps between fibers of the braided layer.